Available online at www.sciencedirect.com

ScienceDirect

Procedia Social and Behavioral Sciences 1 (2009) 1437–1442

Procedia
Social and Behavioral Sciences

World Conference on Educational Sciences 2009

Social networking users' views on technology and the determination of technostress levels

Yusuf Levent Şahin[a], Ahmet Naci Çoklar[b,*]

[a]*Computer and Instructional Technologies, Teaching Department, Anadolu University, Eskişehir 26470, Turkey*
[b] *Computer and Instructional Technologies Teaching Department, Selçuk Universit, Meram Konya 42090, Turkey*

Received October 23, 2008; revised December 22, 2008; accepted January 5, 2009

Abstract

Despite being used frequently due to the benefits brought to daily life, the use of technology also brings with it certain disadvantages. One of these disadvantages, stress, is referred to as technostress. This study analyzes the technostress levels of social networking website users through different variables. Social networking website users were chosen under the assumption that they utilize technology more frequently and closely follow technological developments. Data was gathered by an online questionnaire, with 765 participants. The study concluded that social networking website users have a medium level of technostress, mainly caused by environmental reasons as opposed to social reasons. Also, it was found that age and familial monthly income causes differentiation in technostress levels.

Keywords: Technostress; technology and health; technologically induced stress.

1. Introduction

With the transition from an agrarian society to an industrial society, social life has undergone profound changes due to the use of technology. This change, which is also showing its effects in the transition from industrial societies to knowledge societies, is taking place at a much greater pace in knowledge societies (Credé & Mansell, 1998; Salmi, 2003). Due to the high speed of technological change, it can be observed that in knowledge societies, newer mobile phones, new televisions, faster computers and various other technologies are introduced before users become accustomed to the previous models. This rapid change is the cause of the greatest psychological pressure of our age, which may be taking place unnoticed. This pressure is generally defined as technostress.

*Ahmet Naci Çoklar.
E-mail address: Ahmetcoklar@selcuk.edu.tr.

doi:10.1016/j.sbspro.2009.01.253

1.1. Technostress and its symptoms

By stating that rapidly changing technology would have various negative effects on life in the future, Champion (1988) described technostress as "The Consequence of Technology". As the person who coined the term, Brod (1982) defined technostress as a situation caused by difficulty of a person or institution to adapt to the use of a new technology. Technostress can generally be described as the sum of all negative effects that surface in individuals due to use of technology.

1.2. Basic causes of technostress

The probable factors that have an effect on technostress are the level of technological experience of the user, age, pressure of supervision during use, and the general working atmosphere and environment within an organization (Brod, 1982). However, Enis (2005) determined six fundamental factors that librarians used in dealing with technostress along with suggestions on precautions to be taken regarding the issue, and these findings can be generalized to other fields. The six factors are rapid change, lack of education, increasing workload, lack of standardization, reliability of technology, and changing roles of work. Enis (2005) has also stated that technological innovations such as rapidly changing mobile technologies cause even further technostress today, especially regarding technostress related to changing roles.

1.3. Research purpose

The purpose of this study is to determine the views on technology and levels of technostress of social networking website users. To achieve this purpose, answers to the following research questions were sought:

1. What are the technostress levels of users of social networking websites?
2. Does the level of technostress differentiate between the following variables:
   a. Familial monthly income
   b. Age

1.4. Limitations

This study is confined to the views of people who used the 'Nasilim' application on the social networking website 'Facebook' through March 2008.

2. Methodology

This section comprises of the research model, population, data gathering tool, data gathering procedures and analysis.

2.1. Research model

This descriptive study uses a general survey method. Based on the research purpose, singular and correlational general survey methods are used. The technostress levels of social networking website users are obtained through a questionnaire and results are presented based on the views of these users.

2.2. Population

This study was conducted on individuals who use the 'Nasilim' application on the social networking website 'Facebook'. Not having access to the whole population, a sample was determined using simple random sampling. Among the 'Nasilim' users, a questionnaire was presented to those participating in the study throughout May, 2008. The responses of the 765 voluntary participants who responded during this period where analyzed.

2.3. Data collection tools and data collection procedures

A questionnaire was developed by the researchers to determine the technostress levels of social networking site users. The questionnaire consists of two sections. The first section establishes the personal information of the participants while the second section includes questions aimed at determining the technostress levels of participants. The questionnaire was applied to social networking website users online.
The entries regarding personal information in the first section of the questionnaire were prepared with the secondary objectives of this study in mind, while the entries in the second section were prepared according to the factors that cause technostress as indicated by literature. The questionnaire was validated by reviews of 4 active experts in the departments of Computer and Teaching Technologies and Psychological Guidance and Counseling. The entries in the second and third sections have been arranged as 5-point likert scales as follows: "5-Fully Agree… 1-Strongly Disagree". The questionnaire was distributed and applied to social networking website users online.

2.4. Analysis of data

Percentage and frequency values were used to analyze the general technostress levels of social networking website users. One-way analysis of variance was applied to determine differences regarding monthly familial income, occupation and age groups.

For transferring the entries of the data gathering tool to a computer environment, the 5-point likert options were scored as follows: "Fully Agree 5", "Agree 4", "Indecisive 3", "Disagree 2" and "Strongly Disagree 1". The results regarding whether or not there is change in technostress levels of participants depending on monthly familial income and age are presented and interpreted (Table 1).

Table1.Evaluation Criterias

Evaluation Criteria	Evaluation Range
Very low level technostress	1.00-1.80
Low level technostress	1.81-2.60
Medium level technostress	2.61-3.40
High level technostress	3.41-4.20
Very high level technostress	4.21-5.00

For the all analysis, meaning level have been mentioned by .05 and SPSS 15.0 (Statistical Package for the Social Sciences) were used by statistical analyses.

3. Findings

In this section, findings were expounded about demographic information and technostress level of participants. Also, its investigated that participants' technostress levels are effected by monthly familial incomes and ages. The demographic information regarding participants is provided in Table 2.

Table2. Demographic information regarding teacher candidates

		f	**%**
Monthly Total Income	Less than 1000 YTL	123	21.7
	Between 1000-1500 YTL	167	29.5
	Between 1501-2000 YTL	135	23.8
	More than 2001 YTL	141	25.0
	Total*	566	
Age	20 and below	282	36,9
	Between 21-25	226	29,5
	Between 26-30	143	18,7
	31 and above	114	14,9
	Total	765	

*Some participants refrained from stating their monthly income

When reviewed, Table 2 shows that participants have an equal distribution of monthly income. Reviewing the ages indicates that an important portion of the participants (%66.4) are under 25 years of age.

3.1. Technostress levels of social networking website users

To determine the technostress levels of social networking website users, participants were given 17 questions. Social networking website users appear to have a medium level of technostress, with a general average of (x=2.90). This finding can be explained by Tu, Wang and Shu (2007), who determined in their research that individuals with higher levels of computer literacy have lower levels of technostress when compared to individuals with lower levels of computer literacy. Social networking website users tend to have a higher level of computer literacy, which appears to prevent higher levels of technostress.

When entries regarding technostress levels are analyzed, it has been observed that social networking website users achieve high levels of technostress due to the high costs of technology (x=3.93), malicious or unwanted e-mails (x=3.66), insufficient speeds of computers or internet access (x=3.60), the possibility of personal information being accessed online (x=3.52) and finally, the risk of infection of a computer virus or other malicious code (x=3.48). The fact that all of these entries are environmental factors is quite interesting.

On the other hand, reasons behind low levels of technostress appear to be worries of hardware problems (x=2.18), information overload from the internet or television (x=2.19), social pressure for the use of new technologies (x=2.29), the use of a new technology for the first time (x=2.35) and the fear of unemployment due to the use of new technology (x=2.53). Among these entries, social factors and environmental factors occur equally. The reason for this appears to be that social networking website users have high skill levels regarding the use of technology, and they are using technology to communicate in a social environment. A study performed on a different group could be expected to yield different results.

This study has observed that social networking website users have a medium level of technostress, which is induced more by environmental factors than social factors of technostress.

3.2. The relationship between social networking website users and certain variables

The relationships between social networking website users and the variables determined under the scope of the secondary research objectives of this study have been analyzed and interpreted.

3.2.1. The relationship between technostress levels and total monthly income

Due to the possibility that use of technology could be connected with economic conditions, the relationship between technostress levels and familial monthly income has been studied. To achieve this objective, the relationship between the monthly incomes of participants who disclosed this information and technostress levels were analyzed, providing the results in Table 3.

Table3. Analysis results of technostress levels according to familial monthly income

Source of Variance	Sum of Squares	Sd	Average of Squares	f	p	Significant Difference*
Intergroup	4.650	3	1.550	2.403	.067	More than 2001 – less than 1000, More than 2001 – Between 1001-1500
Intragroup	362.460	562	.645			
Total	367.110	565				

(*) Monthly income in YTL (New Turkish Lira).

It can be seen from Table 3 that technostress levels differentiate between total monthly income levels [$F_{(3-562)}$=2.40 p<.05]. In other words, monthly familial income has an effect on technostress levels. Determining differentiation between groups, the analysis results show that participants with familial incomes of 2001 YTL and above have a lower technostress level (x=2.74) than participants with 1000 YTL or less familial income (x=2.94). In other words, participants with a monthly familial income of 2001 YTL or higher suffer less technostress. Furthermore, it can be said that an increase in total familial income could reduce technostress levels.

The positive effect of raised familial income on technostress could be due to the opportunity to try different technologies. An increase in peoples` purchasing power provides the opportunity to acquire technologies such as hardware and software, as well as possibly providing important input regarding the associated low levels of technostress due to social factors and in keeping up with different technologies.

3.2.2. The relationship between user age and technostress

With consideration to the speed of change in technology and the potential for differences in certain age groups regarding their use of technology, the relationship between participants` age and technostress levels have been analyzed (Table 4).

Table4. Analysis results of participants` technostress levels and age

Source of Variance	Sum of Squares	Sd	Average of Squares	f	p	Significant Difference
Intergroup	5.349	3	1.783	2.81	.039	
Intragroup	482.742	761	.634			31 and above- 20 and below,
Total	488.092	764				Between 26-30 - 20 and below

Reviewing Table 4 reveals that technostress levels differentiate between ages of social networking website users [$F_{(3-761)}$=2.81 p<.05]. In other words, technostress levels of social networking website users can vary depending on their age. The analysis to determine the differentiation showed that between the technostress levels of users aged 21 and below (x=2.98), users between the ages 26-30 (x=2.79) and users older than 30 years of age (x=2.78), there is a differentiation that favors users between the ages of 26 and 30 as well as users of age 30 and above. This finding can be interpreted as indicating that users of ages 26 and above have lower technostress levels due to use of technology than users under 20 years of age.

The effect of age on technology use generally shows that younger individuals have a more positive attitude regarding the use of technology (Voakes et al, 2003). However, it appears that regarding technostress, age has an inverse effect. The lower technostress levels of 26 year or older participants may be attributed to their lifelong experiences. These experiences may have had an effect on the results.

4. Results

In today's society, considering the frequent use and rapid change of technology, it is very important to determine the technostress levels of people and take precautions accordingly.

This study, which is designed to determine technostress levels, covers social networking website users due to their frequent use of technology. The following results have been established from this study:

- Social networking website users encounter medium levels of technostress due to their use of technology.
- While subjects incurred by environmental circumstances such as data security and cost of technology cause high levels of technostress, social factors such as institutional and social pressure and risk of unemployment incur lower levels of technostress.
- Monthly income is an important factor affecting technostress. Individuals with total monthly incomes of 2001 YTL or greater suffer less technostress than individuals with incomes lower than 1500 YTL.
- Another element that affects technostress is age. Regarding technostress associated with the use of technology, it can be said that the age group of 26 years and above is less stressful than the age group of 20 and below.

References

Brod, C. (1982). "Managing Technostress: Optimizing The Use of Computer Technology". *Personel Journal.* 61 (10). ABI/INFORM Global, pp:753-757.

Champion, S. (1988). "Technostress:Technology's Toll", *School Library Journal*, November, 1988, pp: 48-51.

Credé, A. & Mansell, R. (1998). *Knowledge Societies... In a Nutshell: information technology for sustainable development.* Ottawa: International Development Research Centre Publishes, Canada.

Enis, L.A. (2005). “Much of What I Found Out about Technostress and Librarians”. *Computers in Librarians.*September, pp. 10-12.

Ogan, C., & Chung, D. (2003). “Stressed out: A national study of women and men journalism and mass communication faculty, their uses of technology, and levels of professional and personal stres”. *Journalism and Mass Communication Educator*, 57, pp. 352-368.

Salmi, J. (2003). “Constructing Knowledge Societies: New Challenges for Tertiary Education”. *Higher Education in Europe*, 28(1), pp.65-69.

Sanderlin, T.K. (2004). "Managing Technostress in the Organizational Environment: Symptoms and Solutions". *Annals of the American Psychotherapy Association.* pp. 26-32.

Shepherd, S. S. (2004). “Relationships Between Computer Skills and Technostress: How Does This Affect Me?”. *ASCUE Conference,* South Carolina, 6 – 10 June 2004, pp. 225-231.

Tu, Q., Wang, K. & Shu, Q. (2005). “Computer-Related Technostress in China” *Communications of The ACM*, 48(4), pp. 77-81.

Voakes, P. S., Beam, R. A., & Ogan, C. (2003). “The impact of technological change on journalism education: A survey of faculty and administrators”. *Journalism and Mass Communication Educator,* 57(4), pp. 318-334.